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Jan 20, 1988

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TITLE: Single-component tissue adhesive and method for producing same.

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ABSTRACT:

1. Claims for the Contracting States : AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE A tissue adhesive containing, in liquid or solid form, fibrinogen, F XIII, a thrombin inhibitor, prothrombin factors and calcium ions and, where appropriate, a plasmin inhibitor. 1. Claims for the Contracting States : GR, ES A process for the production of a tissue adhesive, which comprises addition to an aqueous isotonic solution which has a pH of 7.5, which has been, where appropriate, pasteurized and, where appropriate, sterilized by filtration, and which contains at least 16 g/l human fibrinogen, 2 g-atoms of calcium per mol of fibrinogen and 1-6 g/l L-arginine monohydrochloride, of sufficient of a solution, which has, where appropriate, been pasteurized, of human factor XIII, of human albumin, of prothrombin concentrate, of antithrombin III and of aprotinin and, where appropriate, Na glutamate and isoleucine that the freeze-dried solution contains, in 1/4 of the volume dispensed into the container, these substances in the following concentration ranges : 65-115 mg/ml of human fibrinogen, 40-80 U/ml of factor XIII 4-40 mg/ml of human albumin, 1-50 IU/ml of PPSB (prothrombin factors), based on F II (prothrombin) 0.01-50 IU/ml of antithrombin III and, where appropriate, 1-10, 000 KIU of aprotinin/ml and 0-20 g/l of Na glutamate and 0-20 g/l of isoleucine.



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immune complexes of patients with systemic lupus erythematosus are removed from blood by a filter contg. polymer absorbents. Thus, triallyl isocyanurate-vinyl acetate-vinyl alc. copolymer [81273-18-9] was synthesized, and L-tryptophan was immobilized on the surface of this polymer. This absorbent was packed in a cylinder and placed in an extracorporeal circulation of patients with systemic lupus erythematosus. The efficacy of the absorbent in removing immune complexes was demonstrated.

101:78888u Surgical threads. Ethicon, Inc. Jpn. Kokai Tokkyo Koho JP 59 34,264 [84 34,264] (Cl. A61L17/00), 24 Feb 1984, US Appl. 401,661, 26 Jul 1982; 30 pp. Surgical threads are prep'd. from hydrophobic, thermally plasticized elastomers. These threads, when used in surgery, maintain mech. strength for a long time in the body. For example, poly(tetramethylene terephthalate-co-poly(oxytetramethylene terephthalate)) [9078-71-1] was prep'd. from poly(m. of di-Me terephthalate, 1,4-butanediol, and poly(tetramethylene oxide)). The polymer was made into fibers and combined with silk to form a conjugated surgical thread.

101:78889v Lubricants for surgical rubber gloves. James, Michael Howard; Bratby, David Michael; Blackley, David Charles; Duck, Roger; Podell, Howard Irwin; Goldstein, Albert (LRC Products Ltd.) PCT Int. Appl. WO 84 00,908 (Cl. B21H21/04), 15 Mar 1984, GB Appl. 82/25,200, 03 Sep 1982; 27 pp. A skin-contacting lubricant layer formed from a hydrogel polymer bonded to a surgical rubber glove is treated with a bactericidal surfactant or a long chain fatty amine to improve the lubricity of the layer with respect to skin. A thin dipped surgical glove of natural rubber latex was leached with H₂SO₄, rinsed, primed by dipping in Al₂(SO₄)₃ soln., dried and dipped in 4% alc. soln. of 2-hydroxyethyl methacrylate-methacrylic acid copolymer [31693-08-0] followed by drying. The rubber was vulcanized and the lubricity with respect to dry skin was evaluated. The coating adhered satisfactorily to the rubber and no visible flaking was obsd.

101:78890p Hydrogel contact lenses. Atkinson, Ivor B.; Holdstock, Barry C.; Knowlton, John L. (CooperVision (U.K.) Ltd.) Eur. Pat. Appl. EP 106,850 (Cl. C08F226/10), 25 Apr 1984, GB Appl. 82/28,965, 11 Oct 1982; 17 pp. A soft hydrogel contact lens is formed from a hydrated lightly crosslinked copolymer of N-vinylpyrrolidone (NVP) and a short chain alkyl acrylate or methacrylate in a wt. ratio of 1.75-2.25:1, a short chain unsat'd. carboxylic acid, a crosslinking monomer and a chem. free radical initiator. The lens has a high water content with good mech. properties. Lenses were cut by lathing buttons prep'd. poly(m. of rediat'd. methacrylic acid 3.22, purified Me methacrylate 32.18, NVP 64.37, and allyl methacrylate 0.23 g using AIBN as initiator. The lenses, hydrated by soaking in NaHCO₃ saline soln. at pH 7.4 had a hydrated refractive index of 1.378 and water content 73.4% wt./wt.

101:78891q Poly(vinyl alcohol) hydrogels as prosthetics. Nippon Oil Co., Ltd. Jpn. Kokai Tokkyo Koho JP 59 56,446 [84 56,446] (Cl. C08L29/04), 31 Mar 1984, Appl. 82/164,870, 24 Sep 1982; 11 pp. A poly(vinyl alc.) [9002-89-6] aq. soln. is frozen and thawed repeatedly to obtain hydrogels that may be used as prosthetic materials. Thus, poly(vinyl alc.) with av. d.p. of >700 was dissolved in H₂O >6 wt. %, frozen at <-3°, thawed at <55°, and subjected to the freeze-thaw process repeatedly to obtain a hydrogel with greater mech. strength. The product was used as a substitute of femur arthroclial cartilage in rabbits.

101:78892r Wound covering textile. Braun, Karl Otto, K.-G. Austrian AT 374,361 (Cl. A61F13/00), 10 Apr 1984, Appl. 82/1,511, 19 Apr 1982; 7 pp. A wound covering that does not adhere to the skin and allows rapid removal of secretions from the wound surface is prep'd. from a highly elastic web of hydrophobic synthetic fibers (such as polyester, polyamide, and polypropylene) composing the wound contact surface. This surface is heat-treated to bond the fibers to each other and to an absorbent layer of highly napped fibers (such as cotton, cellulose, and linen).

101:78893s Hemostatic wound covering adhesive. Lindner, Adolf; Linnau, Yendra (Immuno A.-G. fuer Chemisch-Medizinische Produkte) Austrian AT 374,367 (Cl. A61L15/04), 10 Apr 1984, Appl. 82/683, 23 Feb 1982; 4 pp. An adhesive dressing contains fibrinogen, blood-coagulation factor XIII [9013-56-3], a plasmin inhibitor, an antibiotic, and a cytostatic agent in a tissue-compatible protein or polysaccharide fleece or film matrix. Thus, 10 L frozen human plasma was warmed to 2° and the cryoppt. was obtained and sep'd. from the cold-sol. proteins by extn. of the latter with buffer. The residue was dissolved in 100 mL citrate-glycine buffer at 37°, mixed with 2500 units aprotinin [9087-70-1], 20 IU heparin [9006-49-6], and 2000 mg amikacin sulfate [39831-55-5], and sterilized by filtration. The filtrate (contg. ≥1000 units factor XIII and ≥7500 mg fibrinogen) was used to treat 70 cm² pieces of collagen fleece (15 mL/piece), and the material was frozen, lyophilized, and packaged aseptically.

101:78894t Improved surgical dressings. Nippon Kayaku Co., Ltd. Tokoku Seliyaku Co., Ltd. Jpn. Kokai Tokkyo Koho JP 59 53,411 [84 53,411] (Cl. A61K9/70), 28 Mar 1984, Appl. 82/162,287, 20 Sep 1982; 4 pp. Improved surgical dressings comprise kaolin 1-10, urea [57-13-6] 0.3-2.0, gelatin 0.5-6.0, CM-cellulose Na [9004-32-4] 0.2-3.0, poly(Na acrylate) [25549-84-2] 6.0-10.0, polyhydric alc. 10.0-40.0, oils 0-5.0, surfactants 0-5.0, and H₂O to 100% by wt. The dressings have adequate adhesiveness, flexibility, and stabilizing effects on drugs incorporated. Thus, one dressing comprises kaolin 5, urea 1, gelatin 2, Me salicylate [119-38-8] 2, di-camphor 0.5, l-menthol 0.625, ZnPO₄ 1, glycerin 20, poly(Na acrylate) 7.2, CM cellulose Na 1, and H₂O 59.675 parts.

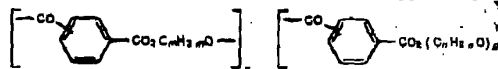
101:78895u Bandages for athletes. Nitto Electric Industrial Co., Ltd. Jpn. Kokai Tokkyo Koho JP 59 51,855 [84 51,855] (Cl.

A61L15/06), 26 Mar 1984, Appl. 82/162,930, 18 Sep 1982. Bandages for the protection of skin and muscles against infections are prep'd. using polyester-cotton cloths treated with water-repellents and adhesives. Thus, a cloth contg. polyester mixed fibers (30:70%) for the warp and cotton fibers for the weft treated with a water-repellent, octadecyl isocyanate-vinyl alc. copolymer [91310-21-3], on one side, and treated on the other with a rubber pressure-sensitive adhesive comprising natural rubber 100, a rosin 100, zinc White 100, polybutene 20, and a preservative. Improved phys. properties of this bandage were described.

101:78896v Individual dental castings. Pfannenstiel, H. Huebner, Heijo (ESPE Fabrik Pharmazeutischer Praeparate G.m.b.H.) Ger. Offen. DE 3,240,907 (Cl. B22C1/22), 10 Mar 1984, Appl. 05 Nov 1982; 20 pp. Individual dental castings are prep'd. from a photopolymerizable mass contg. an acrylate or a methacrylate monomer, a photoinitiator such as camphorquinone and photoinitiator, the mass at 400-500 nm. Form-stable casting models for the of crowns, bridges, inlays and secondary parts for dentures can be built by using this method. Thus, a mixt. of bis-GMA and 1 part of triglycol dimethacrylate contg. camphorquinone and 1.5% triethanolamine is polym'd. with light. When the casting model is finished, it is taken out of the cavity, a casting canal prep'd. earlier from wax is attached to the casting model and the whole product imbedded in a fire-resistant plastic mass. The mass is heated to 600° and the casting is burnt free from residues and finally, a liq. metal such as Au is poured into the casting form. After cooling the model is taken out and gives a precise Au inlay.

101:78897w Activated carbon products for surgical dressings. Maggs, Frederick Arthur Pomroy (Charcoal Cloth Ltd.) GB Pat. Appl. GB 2,127,389 (Cl. C01B31/08), 11 Apr 1984, GB Appl. 82/28,038, 13 Sep 1982; 4 pp. An activated C product for surgical cloth or felt contains Zn, Al, Ca, Mg or Fe, uniformly dispersed in it and may be used in surgical dressings, particularly when it contains Ag. Thus, an impregnation soln. was prep'd. NH₄Cl, ZnCl₂ 3, AlCl₃ 3, citric acid [77-92-9] 4, NH₃ 5 and 0.2%. Three lengths of rayon cloth (25 × 5 cm) were dipped in shallow trough contg. the impregnation soln. and each length passed through roller nips at 345 kPa and plant oven-dried in single pass. Samples were charred at 360° in CO₂ for activation in C₂ at 950°. The cloth was active against *Staphylococcus aureus* and other bacteria.

101:78898x Polymers for surgical goods. Terumo Corp. Kokai Tokkyo Koho JP 59 68,364 [84 68,364] (Cl. C08L27/22), Apr 1984, Appl. 82/178,050, 09 Oct 1982; 6 pp. Surgical



prep'd. from halogenated vinyl polymer and I (xy = 3:1-20:1; n = 2-20; p = 5-60) have improved biocompatibility. Thus, I: n = 9:1; m = 3; n = 2-10; p = 9; mol. wt. 45,000) and PVC [9002-89-6] (mol. wt. 42,000) were mixed at 75:25, heated up to 130°, and into sheets (thickness, 0.4 mm). Phys., chem., and biol. properties of the sheet were studied. The sheet may be used for the prep'd. blood bag and clin. tubes.

101:78899y Hydrogel contact lenses for permanent wear. Atkinson, Ivor B.; Holdstock, Barry C. U.S. Pat. 4,451,530 526-261; C08F26/06, 29 May 1984, GB Appl. 83/11,783, 1983; 4 pp. Hydrogel contact lenses having high tensile and resistant properties are prep'd. from hydroxy alkyl(meth)acrylate copolymers contg. a triazine deriv. crosslinking agent. The compn. contg. N-vinylpyrrolidone 30, hydroxyethyl methacrylate 69.22, methacrylic acid 0.42, 1,3,5-tris(propenoxy)-2,4,6-triazine and ethylene glycol dimethacrylate 0.08% were mixed with 0.2% g monomer of azobisisobutyronitrile. The mixt. was cast into and polym'd. to give lens blanks and swelled with a mild saline soln. The resulting copolymer [91293-21-9] hydrogel had tensile strength 2.75 Kgf/cm² and tear strength 0.296 Kgf/cm.

101:78900s Filling material for teeth. Makarov, K. A.; Shiba, M. Z.; Karal'nik, D. M.; Batovskii, V. N.; Dovgopol, M. Sorokina, T. G.; Alekseeva, L. S.; Gagarina, L. M. (Leningrad Medical Institute; Kharkov Plant of Medical Plastics and Materials) U.S.S.R. SU 1,088,726 (Cl. A61K6/02), 30 Apr 1983, Appl. 3,654,103, 15 Feb 1983. From Otkrytiya, Izobret., Obratsty, Tovarnye Znaki 1984, (16), 12. Addn. of 0.4-2.5 wt. ethylene glycol monomethacrylate [868-77-9] to a dental filling material also contg. an ester of an epoxy resin and methacrylate 8-14, triethyleneglycol dimethacrylate 7-9, amine hardener 0.0, peroxide initiator 0.3-1 and pigment 0.001-0.05 wt. %, with the quartz powder, improves the adhesion of the material and residual stain in the dental material.

101:78901t Sterilizing with hydrogen peroxide and neutralization of residual amounts thereof. Houlbys, Robert Dennis (Cooper, Inc.) Eur. Pat. Appl. EP 110,609 (Cl. A01N69/00), 13 Jun 1984, US Appl. 444,045, 23 Nov 1982; 23 pp. Surfaces and devices as contact lenses sterilized with aq. H₂O₂ solns. are treated with pyruvate [113-24-6] soln. to decompose the residual H₂O₂. Removal of H₂O₂ from the devices makes them nonirritating to tissues. Thus, a neutralizing soln. contained Poloxamer 407 NaCl 0.2, KCl 0.1, sorbic acid 0.2, Na borate 0.22, di-Na edetate boric acid 1.0, and Na pyruvate 0.5% and purified water suff. amt. Eight lenses were soaked in 3% H₂O₂ for 10 min, then cultured in a nutrient broth. Neither lens showed growth, indicat-